MASTER OF SCIENCE
IN
METEOROLOGY AND PHYSICAL OCEANOGRAPHY

USING RAPID ENVIRONMENTAL ASSESSMENT TO IMPROVE THE HAZARD PREDICTION AND ASSESSMENT CAPABILITY FOR WEAPONS OF MASS DESTRUCTION

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The Oceanographer of the Navy is responsible for the environmental data portion of the "4-D cube." This is a new concept that creates a Virtual Natural Environment that must be capable of rapid environmental updates. This research investigates using in situ atmospheric measurements to improve the performance of the Navy mesoscale model, Coupled Ocean-Atmosphere Mesoscale Prediction System. These enhanced, operational model forecasts are used to supply atmospheric forcing to a dispersion model, the Hazard Prediction and Assessment Capability, and the outcome is evaluated to determine the impact of the additional data.

KEYWORDS: REA, TEDServices, Dispersion Model, Mesoscale Model, COAMPS-OS, VNE, JEM, HPAC